



Be Right™

# SAFETY DATA SHEET

This safety data sheet complies with the requirements of:  
SS586: 2008 (2014)

Issue Date 21-Apr-2016

Revision Date 06-Sep-2016

Version 2

## Section 1: IDENTIFICATION

### Product identifier

**Product Name** COD TNTPlus™, HR (20-1500 MG/L)

### Other means of identification

**Product Code(s)**  
TNT822

**Component of Kits or Sets** TNT82206K

**Proper shipping name** Sulphuric Acid

**Safety data sheet number** M0376

**Raw Material/Pure Substance** Mixture

### Recommended use of the chemical and restrictions on use

**Recommended Use** No information available

**Uses advised against** No information available

### Details of the supplier of the safety data sheet

#### Manufacturer

HACH SEA Headquarters  
1 Science Park Road, #05-09, East Wing, The Capricorn, Singapore Science Park II, Singapore 117528

### Emergency telephone number

Chemtrec 1-800-424-9300

## Section 2: HAZARDS IDENTIFICATION

### GHS - Classification

Corrosive to metals	Category 1
Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Vapors)	Category 4
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Germ cell mutagenicity	Category 1B

<b>Carcinogenicity</b>	Category 1A
<b>Reproductive Toxicity</b>	Category 2
<b>Specific target organ toxicity (repeated exposure)</b>	Category 2
<b>Aquatic Acute Toxicity</b>	Category 1
<b>Chronic aquatic toxicity</b>	Category 1

**Label elements**



**Signal word** - Danger

**Hazard statements**

- H290 - May be corrosive to metals
- H302 - Harmful if swallowed
- H311 - Toxic in contact with skin
- H314 - Causes severe skin burns and eye damage
- H317 - May cause an allergic skin reaction
- H332 - Harmful if inhaled
- H340 - May cause genetic defects
- H350 - May cause cancer
- H361 - Suspected of damaging fertility or the unborn child
- H373 - May cause damage to organs through prolonged or repeated exposure
- H410 - Very toxic to aquatic life with long lasting effects

**Precautionary statements**

- P201 - Obtain special instructions before use
- P202 - Do not handle until all safety precautions have been read and understood
- P264 - Wash face, hands and any exposed skin thoroughly after handling
- P270 - Do not eat, drink or smoke when using this product
- P271 - Use only outdoors or in a well-ventilated area
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray
- P272 - Contaminated work clothing should not be allowed out of the workplace
- P273 - Avoid release to the environment
- P234 - Keep only in original container
- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
- P310 - Immediately call a POISON CENTER or doctor
- P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
- P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
- P363 - Wash contaminated clothing before reuse
- P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
- P330 - Rinse mouth
- P331 - Do NOT induce vomiting
- P391 - Collect spillage

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P390 - Absorb spillage to prevent material damage  
P405 - Store locked up  
P406 - Store in corrosive resistant stainless steel container with a resistant inliner  
P501 - Dispose of contents/ container to an approved waste disposal plant

**Other hazards**

No information available

### Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

**Substance**

Not applicable

**Mixture**

Chemical Name	EC No	CAS No	Percent Range
Sulfuric acid	231-639-5	7664-93-9	50 - 100
Mercuric sulfate	231-992-5	7783-35-9	0.1 - 1
Sulfuric acid, disilver(1+) salt	233-653-7	10294-26-5	0.1 - 1
Dichromic Acid	236-881-5	13530-68-2	0.1 - 1

### Section 4: FIRST AID MEASURES

**Description of first aid measures**

**General advice**

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible)

**Inhalation**

IF INHALED: Remove person to fresh air and keep comfortable for breathing  
Call a physician immediately

**Eye contact**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
Call a physician immediately

**Skin contact**

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
Call a physician immediately

**Ingestion**

IF SWALLOWED: Rinse Mouth  
Do NOT induce vomiting  
Call a physician immediately

**Most important symptoms and effects, both acute and delayed**

**Symptoms**

See Section 11: TOXICOLOGICAL INFORMATION

**For emergency responders**

**Self-protection of the first aider**

Use personal protective equipment as required  
Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians**

Treat symptomatically

## Section 5: FIRE-FIGHTING MEASURES

**5.1. Extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

**Unsuitable extinguishing media**

Caution: Use of water spray when fighting fire may be inefficient

**5.2. Special hazards arising from the substance or mixture**

The product causes burns of eyes, skin and mucous membranes  
Thermal decomposition can lead to release of irritating and toxic gases and vapors  
In the event of fire and/or explosion do not breathe fumes

**5.3. Advice for firefighters**

Wear self-contained breathing apparatus and protective suit  
Use personal protective equipment as required

## Section 6: ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

Evacuate personnel to safe areas  
Remove all sources of ignition  
Do not touch or walk through spilled material  
Ventilate affected area  
Use personal protective equipment as required

**For emergency responders**

Use personal protection recommended in Section 8

**Environmental precautions**

Avoid release to the environment  
See Section 12 for additional ecological information

**Methods and material for containment and cleaning up**

Prevent further leakage or spillage if safe to do so  
Dike far ahead of liquid spill for later disposal  
Take necessary precautions in observance of pertinent physical hazards  
Neutralize spill if necessary  
Soak up with inert absorbent material  
Take up mechanically, placing in appropriate containers for disposal  
Clean contaminated surface thoroughly  
Dispose of in accordance with local, state and federal regulations or laws.

**Prevention of secondary hazards**

Clean contaminated objects and areas thoroughly observing environmental regulations

**Reference to other sections**

See section 8 for more information  
See section 13 for more information

## Section 7: HANDLING AND STORAGE

### Precautions for safe handling

Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Do not breathe dust/fume/gas/mist/vapors/spray.

### General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice  
 Do not eat, drink or smoke when using this product  
 Take off all contaminated clothing and wash it before reuse  
 Wash hands thoroughly after handling  
 Regular cleaning of equipment, work area and clothing is recommended

### Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Keep/store only in original container.

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### Occupational exposure limits

Chemical Name	CAS No	Singapore	ACGIH TLV
Sulfuric acid 50 - 100	7664-93-9	STEL: 3 mg/m <sup>3</sup> PEL: 1 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup>
Mercuric sulfate 0.1 - 1	7783-35-9	PEL: 0.025 mg/m <sup>3</sup>	TWA: 0.025 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup> S*
Sulfuric acid, disilver(1+) salt 0.1 - 1	10294-26-5	PEL: 0.01 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup>
Dichromic Acid 0.1 - 1	13530-68-2	NDF	NDF

#### Biological occupational exposure limits

Chemical Name	CAS No	Singapore
Sulfuric acid 50 - 100	7664-93-9	NDF
Mercuric sulfate 0.1 - 1	7783-35-9	50 µg/L
Sulfuric acid, disilver(1+) salt 0.1 - 1	10294-26-5	NDF
Dichromic Acid 0.1 - 1	13530-68-2	NDF

### Legend

See section 16 for terms and abbreviations

### Appropriate engineering controls

Showers. Eyewash stations. Ventilation systems.

### Individual protection measures, such as personal protective equipment

#### Eye/face protection

Wear tight sealing safety goggles and/or face protection shield

**Skin and body protection**

Wear protective gloves and protective clothing

**Respiratory protection**

In case of insufficient ventilation, wear suitable respiratory equipment

**Environmental exposure controls**

Do not allow into any sewer, on the ground or into any body of water  
Local authorities should be advised if significant spillages cannot be contained

**Section 9: PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

<b>Physical state</b>	Liquid		
<b>Gas Under Pressure</b>	Not classified according to GHS criteria		
<b>Appearance</b>	Turbid solution	<b>Color</b>	light orange
<b>Odor</b>	Odorless	<b>Odor threshold</b>	Not applicable

<b><u>Property</u></b>	<b><u>Values</u></b>	<b><u>Remarks • Method</u></b>
<b>Molecular weight</b>	No data available	
<b>pH</b>	< 0.5	
<b>Melting point/freezing point</b>	4 °C / 39 °F	
<b>Boiling point / boiling range</b>	~ 102 °C / 216 °F	Estimation based on theoretical calculation
<b>Evaporation rate</b>	0.16 (water = 1)	Estimation based on theoretical calculation
<b>Vapor pressure</b>	1.725 mm Hg / 0.23 kPa at 25 °C / 77 °F	Estimation based on theoretical calculation
<b>Vapor density (air = 1)</b>	0.03 (air = 1)	
<b>Specific gravity (water = 1 / air = 1)</b>	1.78	
<b>Partition Coefficient (n-octanol/water)</b>	Not applicable	
<b>Soil Organic Carbon-Water Partition Coefficient</b>	Not applicable	
<b>Autoignition temperature</b>	No data available	
<b>Decomposition temperature</b>	No data available	
<b>Dynamic viscosity</b>	~ 2.499 cP (mPa s) at 20 °C / 68 °F	
<b>Kinematic viscosity</b>	~ 1.404 cSt (mm <sup>2</sup> /s) at 20 °C / 68 °F	

**Solubility(ies)**

**Water solubility**

<u>Water solubility classification</u>	<u>Water solubility</u>	<u>Water Solubility Temperature</u>
Soluble	> 1000 mg/L	25 °C / 77 °F

**Solubility in other solvents**

<u>Chemical Name</u>	<u>Solubility classification</u>	<u>Solubility</u>	<u>Solubility Temperature</u>
None reported	No information available	No data available	No information available

**Particle Size** No information available

**Particle Size Distribution** No information available

**Other Information**

**Metal Corrosivity** Classified as corrosive to metal according to GHS criteria

**GHS Metal Corrosivity Classification** Category 1, H290

**Steel Corrosion Rate** 4.88 mm/yr / 0.19 in/yr

**Aluminum Corrosion Rate** 55.4 mm/yr / 2.18 in/yr

**Bulk density** Not applicable

**Explosive properties** Not classified according to GHS criteria.

**Explosion data** No data available

**Upper explosion limit** No data available

**Lower explosion limit** No data available

**Flammable properties** Not classified as flammable according to GHS criteria.

**Flammability Limit in Air**

**Upper flammability limit:** No data available

**Lower flammability limit:** No data available

**Flash point** No data available

**Oxidizing properties** Not classified according to GHS criteria.

**Reactivity properties** Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.

**Section 10: STABILITY AND REACTIVITY**

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**Reactivity**

Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria

**Chemical stability**

Stable under normal conditions

**Explosion data**

**Sensitivity to Mechanical Impact**

None reported

**Sensitivity to Static Discharge**

None reported

**Possibility of Hazardous Reactions**

None under normal processing  
Hazardous polymerization does not occur

**Conditions to avoid**

Exposure to air or moisture over prolonged periods  
Poor Ventilation

**Incompatible materials**

Incompatible with strong acids and bases  
Incompatible with oxidizing agents

**Hazardous Decomposition Products**

Thermal decomposition can lead to release of irritating and toxic gases and vapors

**Section 11: TOXICOLOGICAL INFORMATION**

**Information on Likely Routes of Exposure**

<b>Product Information</b>	Toxic in contact with skin. Corrosive to skin. Corrosive to eyes. Harmful if swallowed. Harmful by inhalation. Skin sensitizer.
<b>Inhalation</b>	Causes burns. Corrosive by inhalation. Avoid breathing dust/fume/gas/mist/vapors/spray. Harmful by inhalation.
<b>Eye contact</b>	Corrosive to the eyes and may cause severe damage including blindness. Causes burns. Corrosive to eyes.
<b>Skin contact</b>	Toxic in contact with skin. Cause severe skin burns and eye damage. Causes burns. May cause sensitization by skin contact.
<b>Ingestion</b>	Ingestion causes burns of the upper digestive and respiratory tracts. Harmful if swallowed. Causes burns.
<b>Aggravated Medical Conditions</b>	Eye disorders. Skin disorders. Respiratory disorders.
<b>Toxicologically synergistic products</b>	None known.
<b>Toxicokinetics, metabolism and distribution</b>	See ingredients information below.

<b>Chemical Name</b>	<b>Toxicokinetics, metabolism and distribution</b>
Sulfuric acid (50 - 100) CAS#: 7664-93-9	The corrosivity of sulfuric acid makes it difficult to assess its effects on metabolism. Its corrosivity is also the main contributor to acute deaths, therefore it is not classified for acute toxicity.
Mercuric sulfate (0.1 - 1) CAS#: 7783-35-9	Central nervous system is the most sensitive target for mercury exposure.
Dichromic Acid (0.1 - 1) CAS#: 13530-68-2	Chromium is human carcinogen mostly by inhalation exposure.



**Product Acute Toxicity Data**

**Oral Exposure Route** No data available

**Dermal Exposure Route** No data available

**Inhalation (Dust/Mist) Exposure Route** No data available

**Inhalation (Vapor) Exposure Route** No data available

**Inhalation (Gas) Exposure Route** No data available

**Unknown acute toxicity**

**Ingredient Acute Toxicity Data**

**Oral Exposure Route**

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid, disilver(1+) salt (0.1 - 1) CAS#: 10294-26-5	Rat LD <sub>50</sub>	> 5000 mg/kg	None reported	None reported	Vendor SDS
Dichromic Acid (0.1 - 1) CAS#: 13530-68-2	Rat LD <sub>50</sub>	80 mg/kg	None reported	None reported	No information available
Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid (50 - 100) CAS#: 7664-93-9	Rat LD <sub>50</sub>	2140 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Mercuric sulfate (0.1 - 1) CAS#: 7783-35-9	Mouse LD <sub>50</sub>	25 mg/kg	None reported	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)

**Dermal Exposure Route**

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Mercuric sulfate (0.1 - 1) CAS#: 7783-35-9	Rat LD <sub>50</sub>	625 mg/kg	None reported	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)

**Inhalation (Dust/Mist) Exposure Route**

**Inhalation (Vapor) Exposure Route**

No data available

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid (50 - 100) CAS#: 7664-93-9	Rat LC <sub>50</sub>	0.510 mg/L	None reported	None reported	LOLI
Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid (50 - 100) CAS#: 7664-93-9	Human TD <sub>Lo</sub>	0.144 mg/L	4 hours	Lungs, Thorax, or Respiration Dyspnea	RTECS (Registry of Toxic Effects of Chemical Substances)

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**Inhalation (Gas) Exposure Route**

No data available

**Product Skin Corrosion/Irritation Data**

No data available.

**Ingredient Skin Corrosion/Irritation Data**

Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sulfuric acid (50 - 100) CAS#: 7664-93-9	Existing human experience	Human	None reported	None reported	Corrosive to skin	HSDB (Hazardous Substances Data Bank)
Mercuric sulfate (0.1 - 1) CAS#: 7783-35-9	Existing human experience	Human	None reported	None reported	Skin irritant	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
Sulfuric acid, disilver(1+) salt (0.1 - 1) CAS#: 10294-26-5	Standard Draize Test	Rabbit	500 mg	4 hours	Not corrosive or irritating to skin	ECHA (The European Chemicals Agency)

**Product Serious Eye Damage/Eye Irritation Data**

No data available.

**Ingredient Eye Damage/Eye Irritation Data**

Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sulfuric acid (50 - 100) CAS#: 7664-93-9	Existing human experience	Human	None reported	None reported	Corrosive to eyes	HSDB (Hazardous Substances Data Bank)
Mercuric sulfate (0.1 - 1) CAS#: 7783-35-9	Existing human experience	Human	None reported	None reported	Eye irritant	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
Sulfuric acid, disilver(1+) salt (0.1 - 1) CAS#: 10294-26-5	Standard Draize Test	Rabbit	180 mg	None reported	Corrosive to eyes	ECHA (The European Chemicals Agency)

**Sensitization Information**

**Product Sensitization Data**

**Skin Sensitization Exposure Route**

No data available.

**Respiratory Sensitization Exposure Route**

No data available.

**Ingredient Sensitization Data**

Skin Sensitization Exposure Route No data available.

Respiratory Sensitization Exposure Route No data available.

Chronic Toxicity Information

Product Repeat Dose Toxicity Data

Oral Exposure Route No data available.

Dermal Exposure Route No data available.

Inhalation (Dust/Mist) Exposure Route No data available.

Inhalation (Vapor) Exposure Route No data available.

Inhalation (Gas) Exposure Route No data available.

Ingredient Repeat Dose Toxicity Data

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid (50 - 100) CAS#: 7664-93-9	Human TC <sub>Lo</sub>	.003 mg/L	168 days	<b>Musculoskeletal</b> Changes in teeth and supporting structures	RTECS (Registry of Toxic Effects of Chemical Substances)

Inhalation (Gas) Exposure Route No data available

Chemical Name	CAS No	ACGIH	IARC	NTP	OSHA
Sulfuric acid	7664-93-9	A2	1	X	X
Mercuric sulfate	7783-35-9	-	3	-	-
Sulfuric acid, disilver(1+) salt	10294-26-5	-	-	-	-
Dichromic Acid	13530-68-2	-	Group 1	Known	X

Legend

<b>ACGIH (American Conference of Governmental Industrial Hygienists)</b>	A2 - Suspected Human Carcinogen A1 - Known Human Carcinogen
<b>IARC (International Agency for Research on Cancer)</b>	Group 1 - Carcinogenic to Humans Not classifiable as a human carcinogen
<b>NTP (National Toxicology Program)</b>	Known - Known Carcinogen
<b>OSHA (Occupational Safety and Health Administration of the US Department of Labor)</b>	X - Present

Product Carcinogenicity Data No data available

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**Oral Exposure Route** No data available

**Dermal Exposure Route** No data available

**Inhalation (Dust/Mist) Exposure Route** No data available

**Inhalation (Vapor) Exposure Route** No data available

**Inhalation (Gas) Exposure Route** No data available

**Ingredient Carcinogenicity Data**

**Oral Exposure Route** No data available

**Dermal Exposure Route** No data available

**Inhalation (Dust/Mist) Exposure Route** No data available

**Inhalation (Vapor) Exposure Route** No data available

**Inhalation (Gas) Exposure Route** No data available

**Product Germ Cell Mutagenicity *in vitro* Data**

No data available.

**Ingredient Germ Cell Mutagenicity *in vitro* Data**

Chemical Name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Sulfuric acid (50 - 100) CAS#: 7664-93-9	Cytogenetic analysis	Hamster ovary	4 mmol/L	None reported	Positive test result for mutagenicity	No information available

**Oral Exposure Route** No data available

**Dermal Exposure Route** No data available

**Inhalation (Dust/Mist) Exposure Route** No data available

**Inhalation (Vapor) Exposure Route** No data available

**Inhalation (Gas) Exposure Route** No data available

**Ingredient Germ Cell Mutagenicity *in vivo* Data**

**Oral Exposure Route** No data available

**Dermal Exposure Route** No data available

**Inhalation (Dust/Mist) Exposure Route** No data available

**Inhalation (Vapor) Exposure Route** No data available

**Inhalation (Gas) Exposure Route** No data available

**Oral Exposure Route** No data available

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Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

**Ingredient Reproductive Toxicity Data**

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

**Inhalation (Vapor) Exposure Route**

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid (50 - 100) CAS#: 7664-93-9	Rabbit TC <sub>Lo</sub>	.02 mg/L	7 hours	<b>Specific Developmental Abnormalities</b> Musculoskeletal system	No information available

Inhalation (Gas) Exposure Route No data available

**Section 12: ECOLOGICAL INFORMATION**

**Ecotoxicity**

Very toxic to aquatic life with long lasting effects

**Product Ecological Data**

**Aquatic toxicity**

Fish No data available

Crustacea No data available

Algae No data available

Other Aquatic Species No data available

**Terrestrial toxicity**

Soil No data available

Vertebrates No data available

Invertebrates No data available

**Ingredient Ecological Data**

**Aquatic toxicity**

**Fish**

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data

Sulfuric acid, disilver(1+) salt (0.1 - 1) CAS#: 10294-26-5	96 hours	<i>Pimephales promelas</i>	LC <sub>50</sub>	0.0012 mg/L	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
Dichromic Acid (0.1 - 1) CAS#: 13530-68-2	96 hours	None reported	LC <sub>50</sub>	0.0031 mg/L	CEPA (Canadian Environmental Protection Agency)
<b>Chemical Name</b>	<b>Exposure time</b>	<b>Species</b>	<b>Endpoint type</b>	<b>Reported dose</b>	<b>Key literature references and sources for data</b>
Sulfuric acid (50 - 100) CAS#: 7664-93-9	96 hours	<i>Lepomis macrochirus</i>	LC <sub>50</sub>	> 16 mg/L	IUCLID (The International Uniform Chemical Information Database)
Mercuric sulfate (0.1 - 1) CAS#: 7783-35-9	7 days	<i>Oncorhynchus gorbusha</i>	LC <sub>50</sub>	0.14 mg/L	EPA (United States Environmental Protection Agency)
<b>Chemical Name</b>	<b>Exposure time</b>	<b>Species</b>	<b>Endpoint type</b>	<b>Reported dose</b>	<b>Key literature references and sources for data</b>
Sulfuric acid, disilver(1+) salt (0.1 - 1) CAS#: 10294-26-5	217 days	<i>Salmo trutta</i>	EC <sub>10</sub>	0.00019 mg/L	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)

#### Crustacea

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Sulfuric acid, disilver(1+) salt (0.1 - 1) CAS#: 10294-26-5	48 Hours	<i>Daphnia magna</i>	LC <sub>50</sub>	0.00022 mg/L	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
<b>Chemical Name</b>	<b>Exposure time</b>	<b>Species</b>	<b>Endpoint type</b>	<b>Reported dose</b>	<b>Key literature references and sources for data</b>
Sulfuric acid (50 - 100) CAS#: 7664-93-9	48 hours	<i>Crangon crangon</i>	EC <sub>50</sub>	> 70 mg/L	IUCLID (The International Uniform Chemical Information Database)
Sulfuric acid, disilver(1+) salt (0.1 - 1) CAS#: 10294-26-5	48 hours	<i>Ceriodaphnia dubia</i>	EC <sub>50</sub>	0.0045 mg/L	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)

#### Algae

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Mercuric sulfate (0.1 - 1) CAS#: 7783-35-9	14 days	<i>Pseudokirchnerella subcapitata</i>	EC <sub>50</sub>	0.033 mg/L	EPA (United States Environmental Protection Agency)

#### Other Aquatic Species

No data available

#### Terrestrial toxicity

#### Soil

No data available

#### Vertebrates

No data available

#### Invertebrates

No data available

**Other Information**

Canadian Environmental Protection Act (CEPA) - Domestic Substances List (DSL): Environmentally Hazardous Substances Categorizations				
Chemical Name	Category	Persistent	Bioaccumulation	Inherently Toxic to Aquatic Organisms
Mercuric sulfate (0.1 - 1) CAS#: 7783-35-9	Inorganics	Yes	No	Yes
Sulfuric acid, disilver(1+) salt (0.1 - 1) CAS#: 10294-26-5	Inorganics	Yes	No	Yes
Dichromic Acid (0.1 - 1) CAS#: 13530-68-2	Inorganics	Yes	No	Yes

**Persistence and degradability**

None known.

**Product Biodegradability Data**

If available, see ingredient data below.

**Ingredient Biodegradability Data**

Test data reported below

Chemical Name	Test method	Biodegradation	Exposure time	Results
Mercuric sulfate (0.1 - 1) CAS#: 7783-35-9	None reported	None reported	None reported	Not readily biodegradable
Sulfuric acid, disilver(1+) salt (0.1 - 1) CAS#: 10294-26-5	Inorganic Salt	None reported	None reported	Not readily biodegradable

**Bioaccumulation**

If available, see ingredient data below.

**Product Bioaccumulation Data**

If available, see ingredient data below.

**Ingredient Bioaccumulation Data**

Chemical Name	Test method	Exposure time	Species	Bioconcentration factor (BCF)	Results
Mercuric sulfate (0.1 - 1) CAS#: 7783-35-9	None reported	None reported	None reported	BCF > 1000	Has the potential to bioaccumulate
Sulfuric acid, disilver(1+) salt (0.1 - 1) CAS#: 10294-26-5	None reported	8 days	<i>Oncorhynchus mykiss</i>	BCF = 2.5	Does not have the potential to bioaccumulate

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**Additional information**

**Product Information**

**Partition Coefficient (n-octanol/water)** Not applicable

**Ingredient Information**

Chemical Name	Partition Coefficient (n-octanol/water)	Method
Sulfuric acid, disilver(1+) salt (0.1 - 1) CAS#: 10294-26-5	log K <sub>ow</sub> > 6.18	Estimation through KOWWIN v1.68 part of the Estimation Programs Interface (EPI) Suite™

**Mobility**

Mobility in soil: High mobility. If available, see ingredient data below.

**Product Information**

**Soil Organic Carbon-Water Partition Coefficient** Not applicable

**Ingredient Information**

Chemical Name	Soil Organic Carbon-Water Partition Coefficient	Method
Sulfuric acid, disilver(1+) salt (0.1 - 1) CAS#: 10294-26-5	log K <sub>oc</sub> > 4.83	No information available

**Additional information**

**Water solubility**

**Product Information**

Water solubility classification	Water solubility	Water Solubility Temperature
Soluble	> 1000 mg/L	25 °C / 77 °F

**Ingredient Information**

Chemical Name	Water solubility classification	Water solubility	Water solubility temperature °C	Water solubility temperature °F
Sulfuric acid (50 - 100) CAS#: 7664-93-9	Soluble	> 1000 mg/L	25 °C	77 °F
Sulfuric acid, disilver(1+) salt (0.1 - 1) CAS#: 10294-26-5	Soluble	8000 mg/L	20 °C	68 °F
Dichromic Acid (0.1 - 1) CAS#: 13530-68-2	Soluble	> 1000 mg/L	25 °C	77 °F

**Other adverse effects**

Contains a substance with an endocrine-disrupting potential.



## Section 13: DISPOSAL CONSIDERATIONS

### Waste treatment methods

#### **Waste from residues/unused products**

Disposal should be in accordance with applicable regional, national, and local laws and regulations  
Dispose of in accordance with federal, state and local regulations

#### **Contaminated packaging**

Do not reuse container

## Section 14: TRANSPORT INFORMATION

### IMDG

<b>14.1 UN/ID no</b>	UN1830
<b>14.2 Proper shipping name</b>	Sulphuric Acid
<b>14.3 Hazard Class</b>	8
<b>14.4 Packing Group</b>	II
<b>14.5 Marine pollutant</b>	This material meets the definition of a marine pollutant
<b>14.6 Special precautions for user</b>	Not applicable

### ADR

<b>14.1 UN/ID no</b>	UN1830
<b>14.2 Proper shipping name</b>	Sulphuric Acid
<b>14.3 Hazard Class</b>	8
<b>14.4 Packing Group</b>	II
<b>14.5 Environmental hazard</b>	Not applicable
<b>14.6 Special Provisions</b>	None

### IATA

<b>14.1 UN/ID no</b>	UN1830
<b>14.2 Proper shipping name</b>	Sulphuric Acid
<b>14.3 Hazard Class</b>	8
<b>14.4 Packing Group</b>	II
<b>14.5 Environmental hazard</b>	Not applicable
<b>14.6 Special Provisions</b>	None

### **Additional information**

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods.

If the item is not in a reagent set or kit, the classification given above applies.

If the item is part of a reagent set or kit the classification would change to the following:

UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

If the item is not regulated, the Chemical Kit classification does not apply.

## Section 15: REGULATORY INFORMATION

### Regulatory information

#### Singapore

#### **Environmental Protection and Management (Hazardous Substances) Regulations**

Verify that license requirements are met.

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Chemical Name	Hazardous Substances	transport
Sulfuric acid	X	-
Mercuric sulfate	X	-

**Environmental Public Health Act**

Dispose of waste product or used containers according to local regulations.

**Hazardous Waste (Control of Export, Import and Transit) Act**

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Take note that wastes may be subject to export, import, or transit controls pursuant to the Basel convention and/or local regulations implementing the Basel convention.

**Maritime and Port Authority of Singapore (Dangerous Goods, Petroleum and Explosives) Regulations**

Regulated. See section 14 for more information.

**Misuse of Drugs Act**

Verify that requirements related to using, handling, and storing substances subject to prohibition, authorization or restriction are met.

Chemical Name	Misuse of Drugs Act
Sulfuric acid	Third schedule - Part II

**Workplace Safety and Health Act**

See section 8 for national exposure control parameters. Comply with the health and safety at work laws.

**Pre-employment screening and appropriate health surveillance**

Chemical Name	Pre-employment screening and appropriate health surveillance
Mercuric sulfate - 7783-35-9	X

**International Regulations**

**Ozone-depleting substances (ODS)** Not applicable

**Persistent Organic Pollutants** Not applicable

**Export Notification requirements**

Chemical Name	Export Notification requirements
Mercuric sulfate - 7783-35-9	Rotterdam

**International Inventories**

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
TCSI	Complies
AICS	Complies
NZIoC	Complies

TSCA- United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL- Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS- European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS- Japan Existing and New Chemical Substances

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**IECSC**- China Inventory of Existing Chemical Substances  
**KECL**- Korean Existing and Evaluated Chemical Substances  
**PICCS**- Philippines Inventory of Chemicals and Chemical Substances  
**TCSI**- Taiwan Chemical Substances Inventory  
**AICS**- Australian Inventory of Chemical Substances  
**NZIoC**- New Zealand Inventory of Chemicals

## Section 16: OTHER INFORMATION

### **Classification Guidance Used**

Product is a mixture classified and labelled according to EC1272/2008.

### **Key or legend to abbreviations and acronyms used in the safety data sheet**

SVHC: Substances of Very High Concern for Authorization:

<i>NIOSH IDLH</i>	<i>Immediately Dangerous to Life or Health</i>
ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
<i>NDF</i>	<i>no data</i>

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Ceiling Limit Value	MAC	Maximum Allowable Concentration
X	Listed	Vacated	These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.
SKN*	Skin designation	SKN+	Skin sensitization
RSP+	Respiratory sensitization	**	Hazard Designation
C	Carcinogen	R	Reproductive toxicant
M	mutagen		

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**Revision Note** None

**Restrictions on use** None

**This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006**

### **Disclaimer**

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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**End of Safety Data Sheet**